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Fuels, Lubricants and Fluids

1. Hydrocarbon fuels (gasoline). The Rumanian Air Force uses three types of gasolines, 90 octane, 87 octane and 71 octane.

(a) The 90 octane is cherry red in color. It is utilized only for the Soviet aircraft in the Rumanian Air Force. The TU-2, YAK-9, YAK-11, Lavochkin-9 and the Stormovik (IL-2) are always refueled with this gasoline. 25X1 In regard to the three types of gasoline, I do not know what dyes are used for color coding nor do I know the length of time the gasoline can be stored without deteriorating so much as to be unusable.

(b) The 87 octane gasoline is blue in color. 25X1 hands became extremely dry upon contact with this gasoline. the following types of aircraft in the Rumanian Air Force being refueled with 87 octane:

Heinkel 111, types H and H6 with Jumo 210F and 210J engines.
Messerschmitt 109G, with a Mercedes Benz engine.
IAR-80, Rumanian fighter with a Rumanian-made "K-14" 800 to one thousand HP, 14-cylinder radial engine.
IAR-39, Rumanian open cockpit biplane bomber, with a single K-14 engine.

(c) 71 octane gasoline is clear and colorless and is used by the following aircraft:

PO-2, Soviet biplane trainer, five-cylinder radial 125 HP engine.
Fleet trainer-Gypsy-Minon engine.
Fiesler Storch-Argus eight-cylinder, inline engine (German).
Focke-Wolf 58B, twin-engine trainer.
Aero-45, Rumanian-made four-passenger liaison craft, two, six-cylinder, Walter

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Major engines.
Nardy-single engine, six-cylinder Alfa Romeo trainer.

(d) Rumanian Air Force regulations read that the Engineering Officer of the Regiment should make an analysis of gasoline before each refueling. This is not the practice, however. I recall that only upon arrival of a new shipment was the gasoline analyzed.

(e) Aviation gasoline in Rumania is not as good as it was during WW II. The gasoline now seems to contain more fats because, I believe, the cracking process in refining is not as thorough as it was during WW II.

[redacted]

Lubricating Oils

3. (a) Since WW II, the Rumanian Air Force has been using a lubricating oil of Rumanian manufacture, but supposedly not a Rumanian patent, called "Intava". During WW II, an oil with the trade name "Gargoil" was used by the Air Force. I consider it superior to the "Intava" oil which is now the only type used. Intava oil is olive green in color.

25X1 (b) [redacted]

25X1 (c) [redacted] an oil of Soviet manufacture (name unknown) was utilized by the 7th Fighter Regiment on the YAK-9 equipment. In the Fall of 1951, this regiment gave its 12 YAKs to the 2nd or 3rd Fighter Regiment at Targusor/Ploesti Air- 25X1 field [4555N-2552E], which, in return, gave the 7th Fighter Regiment 10 or 12 IAR-80's. The 7th Fighter Regiment used the Soviet oil left over from the YAKs on an IAR-80 [redacted] the K-14 engine of the IAR began to "grip" and "block", emitting white smoke. It is my belief that the Soviet oil was too light and gave improper lubrication to the K-14 engine. This 25X1 was satisfactory for the YAK aircraft, however.

(d) [redacted]
25X1 [redacted] the oil tanks of the TU-2 were always filled to within five liters of maximum capacity, since the oil used had the tendency to foam. The TU-2 had two 80-liter oil tanks. The oil temperature of this aircraft was brought up to 50°C before a take-off was attempted and was kept between 60°C and 70°C while in flight.

(e) [redacted] the wheels of the TU-2 had a tendency to lock unless they were greased with a graphite- 25X1 vaseline type grease after every 40 or 45 flying hours.

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Hydraulic Fluids

4. [redacted]
25X1 [redacted] the plane's hydraulic fluid was clear white, glycerine-like in texture and had an alcohol smell. [redacted] 25X1 The brakes on the TU-2 and, for that matter, on all other Soviet aircraft were always excellent. The TU-2 had hydraulically-operated controls.

De-icing Fluids

5. (a) Among Rumanian aircraft, I recall that the Heinkel 111 used a de-icer fluid consisting of 40 per cent glycol and 60 per cent water. This mixture was kept in the aircraft year round.

25X1 (b) [redacted] no information on the type of de-icing fluids used in Soviet aircraft. On the TU-2, the leading edges of the wings and the horizontal and vertical stabilizers were equipped with compressed air de-icer boots. The four-blade variable pitch metal prop was equipped with a small hole where the blade joins the prop hub and out of which, [redacted] de-icer fluid was to be 25X1 sprayed on the blade. [redacted] 25X1

6. I have no information on engine-cooling fluids.

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Aircraft Tires in the Rumanian Air Force

7. (a) The TU-2 Soviet twin-engine light bomber, [redacted] 25X1 [redacted] was equipped with a low-pressure balloon-type tire which cast a large footprint . I believe that 25X1 the tire pressure was approximately three atmospheres. The tire casings had approximately six snaked treads about one cm deep and spaced ½ cm apart. [redacted] 25X1 [redacted] 25X1 25X1

(b) The YAK-9 and YAK-11 are equipped with a high-pressure tire which casts a small footprint. There is no tread on this tire. [redacted] 25X1 [redacted] In the Spring of 1950, [redacted] 25X1 [redacted] Air Cadet School No 1, then located on this airfield, had much difficulty in obtaining extra tires for YAK conventional-engine equipment. After much insistence, one tire for the YAK was obtained from the Soviet Air Force (SAF) at that time stationed at Buzau Airfield /4508N-2648E/. The general complaint was that the SAF never supplied spare parts of any nature along with its leased equipment. This condition still prevailed as late as mid-March 52.

(c) I consider the tires on the IAR-80 Rumanian fighter a semi-balloon type, having slightly less pressure than tires on the YAK. The casings of this tire also have no treads. I heard of two accidents with IAR-80's which occurred in the Summer of 1951 at Focsani/South Airfield /4540N-2712E/, training field for Air Cadet School No 2. In both cases tire blowouts occurred upon landing. As a result of these accidents, the Rumanian Air Force Command (Comandamentul Fortelor Aeriene Militare-CFAM) ordered that a pressure test be given to all tires of Rumanian IAR-80 aircraft.

(d) Rumanian aircraft are equipped with Rumanian-made "Banloc" tires which are manufactured at the Banloc plant, approximately five km 25X1 south of Ploesti on the west side of the Bucharest-Ploesti highway. The tires produced there are synthetic, with a small percentage of natural rubber. [redacted] 25X1 [redacted]

Spark Plugs

8. (a) Eighteen mm Bosch spark plugs (German) are used by the Rumanian Air Force. There is a continual and grave shortage of these plugs. I know of no Soviet-manufactured plugs having been delivered to the Rumanian Air Force, as yet. The Bosch 25X1 plugs are reconditioned as needed and used again.

(b) During the Summer of 1950, [redacted] 25X1 25X1 at Tecuci Airfield, at that time the site of the Center of Instruction of the Air Force (Centrul de Instructie al Aviatie), [redacted] one case each from Tecuci and Zilistea Airfields. [redacted] these cases, containing approximately 1500 spark plugs each, by plane, to the 4th Aero Transport Regiment which was then at Bucharest/Biulesti Airfield. This Regiment, in turn, was to deliver them for reconditioning to the Rumanian Air Force Supply Depot #2 (Gruparea de Deposite #2) located at Buch/Cotroceni AirField /4426N-2603E/.

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